

## REMARKS

In the Office Action of February 1, 2007, claims 1, 6-9, 11-12, 18-20, 22-23, 28, 32, 37-38, 42, 57, 61, 65 and 70-71 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ling (International Application No. WO/98/39871), in view of any/all of Ungerboeck ("Channel coding with multilevel/phase signals"), Lee ("Convolutional Coding: Fundamentals and Applications"), and Schlegel ("Trellis Coding") and further in view of Uyematsu et al. ("Trellis coded modulation for multilevel photon communication systems"), Winters et al. ("Reducing the effects of transmission impairments in digital fiber optic systems") and Aman et al. ("Combined trellis coding and DFE through Tomlinson precoding"). Claim 1 is directed to a method for high-speed transmission of information data on an optical channel. The method includes "encoding information via a trellis encoder to produce digital multilevel symbols; converting the digital multilevel symbols into analog multilevel signals; and transmitting the analog multilevel signals over the optical channel." Thus claim 1 includes transmitting analog multilevel signals over an optical channel. Applicant submits that this is not taught or suggested by the cited art. The Examiner acknowledges that Ling does not teach transmitting analog multilevel signals over an optical channel. Although the Examiner can find no prior art that teaches transmitting analog multilevel signals over an optical channel, he asserts that it would have been obvious to do so. Applicant disagrees. To support his assertion, the Examiner argues at length, on page 3 of the Office Action, that it would be obvious to apply the trellis coded modulation of Ling to the optical communication system of Uyematsu. Applicant submits that even if it were obvious to apply the trellis coded modulation of Ling to the optical communication system of Uyematsu, it in no way follows that it is obvious to transmit analog multilevel signals over an optical channel, per claim 1. Therefore, claim 1 is allowable over the cited art.

Regarding claim 11, said claim includes a limitation of "transmitting the analog multilevel signals by time division multiplexing the plurality of analog multilevel signals onto an optical channel." On page 5 of the Office Action, the Examiner acknowledges that none of the art he has cited teaches this limitation. However, the Examiner invokes "Official Notice" and alleges that this limitation constitutes an "extremely well-known practice." On page 6 of the Office Action, the Examiner alleges that "transmitting a time division multiplexed signal is a

common way to transmit multiple channels of data across a single optical communication line (fiber)." Applicant strongly disagrees and submits that the Examiner cannot fall back on Official Notice for such a critical element of the claimed invention. If the Examiner is going to make the assertion that "transmitting a time division multiplexed signal is a common way to transmit multiple channels of data across a single optical communication line," he needs to support such a crucial allegation with actual prior art. Applicant submits that he is unable to do so because no such art exists. Therefore, claim 11 is allowable over the cited art.

Independent claims 23, 32, 38, 42, 57, 61, and 71 contain limitations similar to limitations contained in claim 1 and were rejected on grounds similar to those used to reject claim 1. Applicant submits that claims 23, 32, 38, 42, 57, 61, and 71, and all claims depending therefrom, are allowable over the cited art for the reasons set forth above with respect to claim 1.

In view of the foregoing amendments, Applicant respectfully requests allowance of claims 1, 5-9, 11, 12, 16, 18-20, 22, 23, 32, 36-38, 41, 42, 45, 57, 60, 61, 64, 71 and 74.

The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Account No. 13-0017.

Respectfully submitted,

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MCANDREWS, HELD & MALLOY, LTD.

/John A. Wiberg/

John A. Wiberg  
Reg. No. 44,401  
Tel.: 312 775 8000

McAndrews, Held & Malloy, Ltd.  
500 West Madison Street  
34<sup>th</sup> Floor  
Chicago, IL 60661  
Telephone: (312) 775-8000  
Facsimile: (312) 775-8100